Materials Design Analysis Reporting (MDAR) Checklist for Authors

The MDAR framework establishes a minimum set of requirements in transparent reporting applicable to studies in the life sciences (see Statement of Task: doi:10.31222/osf.io/9sm4x.). The MDAR checklist is a tool for authors, editors and others seeking to adopt the MDAR framework for transparent reporting in manuscripts and other outputs. Please refer to the MDAR Elaboration Document for additional context for the MDAR framework.

Materials

Antibodies	Yes (indicate where provided: section/paragraph)	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.	No relevant research was involved in this paper	n/a

Cell materials	Yes (indicate where provided: section/paragraph)	n/a
Cell lines: Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID	No relevant research was involved in this paper.	n/a
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	No relevant research was involved in this paper.	n/a

Experimental animals	Yes (indicate where provided: section/paragraph)	n/a
Laboratory animals: Provide species, strain, sex, age, genetic modification status. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID	No relevant research was involved in this paper.	n/a
Animal observed in or captured from the field: Provide species, sex and age where possible	No relevant research was involved in this paper.	n/a
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID	No relevant research was involved in this paper.	n/a

Plants and microbes	Yes (indicate where provided: section/paragraph)	n/a
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)	No relevant research was involved in this paper	n/a
Microbes: provide species and strain, unique accession number if available, and source	No relevant research was involved in this paper	n/a

Human research participants	Yes (indicate where provided: section/paragraph)	n/a
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	MRI scans and clinical data were collected with the approval of the local ethics committee of the First Hospital of Jilin University, China (2019-263).	
Provide statement confirming informed consent obtained from study participants.	Written informed consent was obtained from each participant.	
Report on age and sex for all study participants.	Section 2.1 /Paragraph 1, 2	

Design

Study protocol	Yes (indicate where provided: section/paragraph)	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.	No clinical trials were involved in this paper.	n/a

Laboratory protocol	Yes (indicate where provided: section/paragraph)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	No relevant research was involved in this paper.	n/a

Experimental study design (statistics details)	Yes (indicate where provided: section/paragraph)	n/a
State whether and how the following have been done**, or** if they were not carried out.		
Sample size determination	Two datasets were used in this study. The first dataset for training the SLANT-27 automatic segmentation model consisted of 1917 3D T1-weighted MRI scans from multiple centers, and the second dataset was collected to train and test the image domain transfer GAN model contained 48 subjects from one center.	
Randomisation	Not carried out.	
Blinding	Not carried out.	
Inclusion/exclusion criteria	The MRI exclusion criteria were contraindications to having an MRI scan, severe neurological disorders, a history of serious head trauma or brain tumors (none were excluded).	

Sample definition and in-laboratory replication	Yes (indicate where provided: section/paragraph)	n/a
State number of times the experiment was replicated in laboratory	1、 Figure 1. We repeated our experiments 10 times to conduct the model. 2、 In "Test-retest experiments of different field strengths and scanner vendors", we repeated each compute for five times. 3、 In "Analysis by local regions", we repeated each compute for five times.	
Define whether data describe technical or biological replicates	This paper doesn't involve data describe technical or biological replicates	n/a

Ethics	Yes (indicate where provided: section/paragraph)	n/a
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	MRI scan and clinical data were collected with the approval of the local ethics committee of the First Hospital of Jilin University, P.R. China (2019-263).	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	No experimental animals were involved in this paper	n/a
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	No specimen and filed samples were involved in this paper	n/a

Dual Use Research of Concern (DURC)	Yes (indicate where provided: section/paragraph)	n/a

If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval	This study is not dual use research.	n/a

Analysis

Attrition	Yes (indicate where provided: section/paragraph)	n/a
State if sample or data point from the analysis is excluded, and whether the criteria for exclusion were determined and specified in advance.	No, none of data is excluded from the analysis.	

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Section 2.7/Paragraph 1,2 and Table 1-4	

Data Availability	Yes (indicate where provided: section/paragraph)	n/a
State whether newly created datasets are available, including protocols for access or restriction on access.	The segmentation algorithms to support the findings of this study are still under early stage development. For the datasets, we do not share them directly due to the ethics of the clinical study. Both the codes and data can only be acquired via a special request to the corresponding author.	
If data are publicly available, provide accession number in repository or DOI or URL.	Date are not publicly available in this paper.	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	No publicly available are not reused.	

Code Availability	Yes (indicate where provided: section/paragraph)	n/a
For all newly generated code and software essential for replicating the main findings of the study:		
State whether the code or software is available.	Both the codes and data can only be acquired via a special request to the corresponding author.	
If code is publicly available, provide accession number in repository, or DOI or URL.	Code is not publicly available in this paper.	n/a

Reporting

Adherence to community standards	Yes (indicate where provided: section/paragraph)	n/a
MDAR framework recommends adoption of discipline-specific guidelines, established and endorsed through community initiatives. Journals have their own policy about requiring specific guidelines and recommendations to complement MDAR.		
State if relevant guidelines (eg., ICMJE, MIBBI, ARRIVE) have been followed, and whether a checklist (eg., CONSORT, PRISMA, ARRIVE) is provided with the manuscript.	ICMJE guidelines were followed, as the journal follows ICMJE recommendations for publication.	

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